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Statement submitted by International Network of Liberal Women, a non-governmental organization in consultative status with the Economic and Social Council*

The Secretary-General has received the following statement, which is being circulated in accordance with paragraphs 36 and 37 of Economic and Social Council resolution 1996/31.

* The present statement is issued without formal editing.

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Statement

Women in Big Data and Technology

The Sustainable Development Goals can only be achieved if women are able to participate in an equal way by unlocking the growth potential with women and girls taking an equal part in Big data and technologies.

International Network of Liberal Women is a network of women worldwide whose main objective is to advance the empowerment of all women and girls worldwide and to develop women's awareness of their rights and political, economic, social and cultural responsibilities. The network, which reinforces relationships and exchanges among women all over the world, believes there is a rich opportunity for women on all levels; especially through liberalism, to come together and share expertise for mutual benefit and empowerment of all women and girls.

Lack of Access to data and information gaps are often impediments to achieving these goals. The 2030 Agenda explicitly calls for a data revolution for Sustainable Development Goals. The data revolution has been driven by explosions in the volume of data, the speed with which data is produced, the number of producers of data, and the range of issues on which there is data. These Big data systems are generated by new technologies such as mobile phones and emerging "internet of things", but also include other data sources, such as social media, social protection systems and citizen-generated data2. In the context of sustainable development, this also suggests the integration of these new sources of data with traditional data in order to produce high quality information that is more detailed, timely, and relevant. These shifts in data systems also create opportunities for greater openness and transparency, which must be leveraged in a way that protects privacy and human rights, taking into account data inclusivity.

In some countries organizations are working on women's empowerment and gender equality, recognizing the potential of integrating big data and analytics into programs and policies, and aiming to identify applications of big data that could lead to impactful solutions. Therefore, it is natural for these organizations to collaborate to ensure that the data revolution for sustainable development responds to women's needs and issues of data inclusion. Girls, young women and lesbian, gay, bisexual, and transgender people, are encouraged to pursue their studies and work in science, engineering, maths and technology and to ignore negative and stagnating reactions.

International Network of Liberal Women believes United Nations Women can play an important role ensuring that the data revolution for sustainable development is inclusive, not only by incorporating Big data1 and analysis of planning and decision making, but also by working with governments, policy leaders, and the broader international community to address the gaps in women's access to information technology and other tools and activities that generate new sources of data. Several pilot projects have demonstrated the feasibility of using big data analytics for sustainable development. Insights regarding mobility patterns, social interactions, social protection systems, sentiments and attitudes, economic activity, early warning, and community well-being can be derived from aggregated, privacy-protected datasets.

Over the past few years it has been confirmed that biological differences, such as women experiencing higher levels of anxiety and less tolerance for stress, explained why there were fewer women in top engineering and policy leadership positions in companies.

Women's under-representation today means women's exclusion in a surely predominantly digital future. This has enormous implications, socially and

economically in terms of lost growth, whilst the demand for skilled information technology professionals is growing. Women comprise approximately half the population, yet they are starkly under-represented in the digital economy. The gender digital gap is mirrored in low and decreasing numbers of girls taking up science, technology, engineering, mathematics studies, of women choosing information technology — related professions, of women's under-representation in management in the information technology industry and of the few women-led and women-founded tech companies.

Many girls begin their familiarization with information technology in a world of gender stereotypes; science, technology, engineering, mathematics studies and digital industries have systematically been portrayed as a male domain. The roots of the digital and technology divide are therefore embedded in societal stereotypes of what is appropriate for each gender including gender attributions as regards professional paths and abilities. These factors intertwine and reinforce the digital divide.

Providing girls and young women with advanced digital skills early on and encouraging them to take higher education in science, technology, engineering, mathematics fields will not only advance them individually, it will bring particularly high economic returns in the digital age and technology. The acquisition of digital skills by girls and women is a prerequisite for female empowerment and inclusive and equitable access to digital economy gains and social protection systems. The technical career opportunities should be better highlighted to female students at all levels, starting early on. Organizations and businesses have a role to play too. Attracting women into digital roles should be a key focus for all businesses not only to improve diversity of teams but to ensure the future sustainability of that rapidly growing industry.

A joint program of work around the use of Big data and analytics should be established in order to improve the lives of women and girls.

Today 90 per cent of the jobs require basic digital and technology skills, at the same time North Africa and Europe faces a shortage in information technology specialists. Forty per cent of enterprises trying to recruit information technology specialists report difficulties in getting qualified people. The cyber security field is an example of a massive skills shortage. The data gap, predicted to hit 1.8 million globally by 2022 and 350 000 in Europe alone, is exacerbated by lack of female representation. Women comprise only 11 per cent of the workforce, according to the "Women in Cyber security" research. This is compounded by the fact that women are under-represented at the inception level, be it in hardware manufacturing or software development. It is essential to have gender-neutral innovations in fields/businesses working on connected vehicles, robotics, Fablabs open hardware and Internet of Things.

The lack of critical mass of girls and women in science, technology, engineering and mathematics education affects access to digital careers. Once there, staying and growing in those careers is harder for women than it is for men. Lack of role models, weak business networks, stereotypes, bias and low financial support all combine to push women out. According to several reports such as "The state of the European tech" only 6 per cent of their selected European venture-backed companies have women chief executive officers.

Studies show also that female entrepreneurs face particular difficulties in accessing start-up capital necessary to set up and grow their businesses. One reason for that is that venture capital networks are male-dominated and prefer to fund male-led businesses. Another reason is that many women lack collaterals required by traditional financial institutions to prove they are credit-worthy.

International Network of Liberal Women promotes better use of big data, digital technologies for teaching, and digital competences among women and girls. It stresses the need for young women and girls around the world to learn basic algorithms and computational thinking to become active creators and leaders.

Therefore, International Network of Liberal Women calls upon the United Nations Women to:

- promote the filling of gender gaps in "traditional" data, including areas where women's activities, women's needs, women's interests, and threats women face are largely invisible, to get a richer, more nuanced understanding of gender equality and women's empowerment issues;
- to facilitate real-time situational monitoring of gender indicators and progress on gender equality across the Sustainable Development Goals;
- to adopt an ideal platform of innovation to strategize on how to contribute and strengthen and promote digital skills and education for girls and women;
- to convince all Governments, businesses to recruit and invest in diversity because research shows that the collective intelligence of a team outperforms individual abilities and the number of women on the team enhances collective capabilities of the team;
- to adopt an ideal platform to streamline women- in- digital in all relevant activities and platforms to make them more inclusive of women for example the outreach campaign for Digital Opportunities, Social Protection Systems and pilots in Europe;
- -to ensure and give women in technology their voice and visibility (By providing an equal playing field and advancing women);
- to convince all Governments, businesses to create the leaders of the future by identifying potential female leaders and mentoring them appropriately to unlock the impact of diversity.